

Thursday  
June 14, 1990

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**Part VII**

**Department of  
Transportation**

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**Research and Special Programs  
Administration**

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**49 CFR Parts 171 and 173  
Periodic Inspection and Requalification of  
Acetylene Cylinders; Notice of Proposed  
Rulemaking**



## DEPARTMENT OF TRANSPORTATION

Research and Special Programs  
Administration

49 CFR Parts 171 and 173

[Docket No. HM-23, Notice No. 90-11]

RIN: 2137-AA53

Periodic Inspection and  
Requalification of Acetylene CylindersAGENCY: Research and Special Programs  
Administration (RSPA), DOT.

ACTION: Notice of proposed rulemaking.

**SUMMARY:** RSPA is proposing to amend the Department's Hazardous Materials Regulations (HMR; 49 CFR parts 171-180) to require regular inspection and periodic requalification of acetylene cylinders. This action is being taken in response to a petition submitted by the Compressed Gas Association, Inc. (CGA). The intended effect of this action is to adopt standards for use in early detection of cylinder deficiencies, and for use in the periodic requalification of acetylene cylinders. Adoption of these standards would provide greater assurance that cylinders are safe for transportation of acetylene.

**DATES:** Comments must be received on or before October 9, 1990.

**ADDRESSES:** Address comments to the Dockets Unit, Research and Special Programs Administration, U.S. Department of Transportation, Washington, DC 20590. Comments should identify the docket and notice number and be submitted in five copies. Persons wishing to receive confirmation of receipt of their comments should include a self-addressed stamped post card. The Dockets Unit is located in room 8421 of the Nassif Building, 400 Seventh Street SW., Washington, DC. Public Dockets may be reviewed between the hours of 8:30 a.m. and 5:00 p.m., Monday through Friday, except holidays.

**FOR FURTHER INFORMATION CONTACT:** Marilyn Morris, Standards Division, Office of Hazardous Materials, Transportation, U.S. Department of Transportation, Washington, DC 20590, (202) 366-4488.

## SUPPLEMENTARY INFORMATION:

## I. Background

Requirements covering the qualification, maintenance and use of cylinders are contained in § 173.34 of the HMR. Currently DOT 8 and DOT 8AL cylinders, used for acetylene, are not subject to periodic visual inspection or retest requirements. In 1978, CGA issued a pamphlet containing recommended

guidelines for use in the inspection of acetylene cylinders. The pamphlet was issued as a tentative guide to allow CGA an opportunity to obtain feedback on the recommendations and methods contained in the pamphlet. In 1985, CGA issued the revised guidelines under CGA Pamphlet C-13, entitled "Guidelines for Periodic Visual Inspection and Requalification of Acetylene Cylinders." To provide greater assurance that these cylinders are safe for transporting acetylene, CGA has submitted a petition for rule change (P-0981) to RSPA, requesting that CGA Pamphlet C-13 be incorporated by reference for use in the inspection and requalification of acetylene cylinders.

RSPA believes CGA's petition has merit. The need for periodic requalification of acetylene cylinders is supported by the results of cylinder inspections conducted by RSPA's enforcement staff. These inspections have disclosed deficiencies, such as shrinkage, air pockets, and voids, in porous fillings. A cylinder explosion occurring at one facility may have been caused by a "flashback," compounded by excessive voids in the porous filling material. RSPA believes that improved quality assurance programs would promote better detection of deficiencies in acetylene cylinders. Accordingly, in this notice, RSPA is proposing to establish standards for inspection, at the time of each filling, and the periodic requalification of DOT 8 and DOT 8AL acetylene cylinders. These standards would consist of the guidelines contained in CGA Pamphlet C-13, which would be incorporated by reference in § 171.7 of the HMR.

CGA Pamphlet C-13 contains detailed procedures covering the inspection of acetylene cylinders for defects and leakage at the time of each filling, the periodic requalification of the cylinder shell and porous filler, and the requalification of cylinders subject to the action of fire. Periodic requalification of the cylinder shell would be achieved by a complete external visual inspection of the shell. For cylinders manufactured before January 1, 1985, the first inspection would be performed before January 1, 1990. Cylinders manufactured on or after January 1, 1985, would be inspected on a ten year basis from the date of manufacture. After the initial qualification, the shell would be requalified every 10 years thereafter.

Requalification of the porous filling in these cylinders would be achieved by removing the cylinder valve and the core-hole packing and inspecting the porous filling material for imperfections, such as unacceptable voids, and

excessive clearance (i.e., the space between the porous filling and the steel shell). For cylinders manufactured before January 1, 1985, requalification of the porous filling would be performed before January 1, 2000. Cylinders manufactured on or after January 1, 1985, would be inspected no sooner than three years and no later than 20 years from the date of manufacture. A requalification would not be performed within the first three years following the date of manufacture of the cylinder in order to allow sufficient time for settling of the porous filling inside the cylinder. After the initial requalification, no subsequent requalification of the porous filling would be required.

In CGA Pamphlet C-13, CGA recommends that the inspections be performed only by competent and trained persons who are acetylene cylinder refillers, manufacturers or authorized reinspection facilities registered with RSPA. However, the pamphlet contains no specific qualification criteria for these inspectors. Because of the unique construction of acetylene cylinders, RSPA believes these functions should be performed by persons who are knowledgeable of acetylene cylinders and who are known to RSPA. Therefore, RSPA is proposing in this notice that persons who perform requalifications of acetylene cylinders must hold a valid retester's identification number in accordance with § 173.34(e) of the HMR. RSPA believes most persons who would be performing these requalifications are required to hold a current retester or repairer identification number, issued by RSPA, under current regulations. Therefore, this requirement would impose little burden on affected persons. RSPA seeks comments on the extent of the burden imposed by registration requirements.

## II. Section By Section Review

**Section 171.7.** A new paragraph (d)(3)(xiii) would be added to incorporate by reference CGA Pamphlet C-13, 1985 edition.

**Section 173.3.** In the table in paragraph (e), the line entry for "DOT 8-8AL" would be amended by removing the notation "No retest required" and by adding a reference "10 or 20 years, see § 173.34(e)(17)". Proposed § 173.34(e)(17) would require that acetylene cylinders be requalified in accordance with CGA Pamphlet C-13. After a cylinder has been successfully requalified, it would be marked with the cylinder retester's identification number in accordance with § 173.34(e)(6) and, in addition, be marked with the letter "S" for a shell